The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A chemical processing apparatus comprising:
a pressure vessel; and a microreactor disposed within the pressure vessel, the pressure vessel constructed and arranged to maintain the pressure vessel and the microreactor at elevated pressure when a chemical operation is performed within the apparatus, the microreactor comprising a material selected from the group consisting of nonmetallic elements of groups III, IV and V of the Periodic Table, ceramics, glasses, glass ceramics, polymers, composite materials, silicon and metals, wherein the apparatus further comprises a heat conductive medium supporting the microreactor within the pressure vessel and ~~communicating with the microreactor~~ arranged and positioned so as to be capable of providing thermal exchange between the microreactor and the pressure vessel, and wherein the apparatus further comprises an inlet line passing through the pressure vessel wall, the inlet line positioned and arranged so as to be able to introduce one or more fluids to be processed into the microreactor, and an outlet line passing through the pressure vessel wall, the outlet line positioned and arrange so as to be able to remove one or more processed fluids from the microreactor, whereby continuous processing of reactants at high pressures may be achieved.

2. (Original) The chemical processing apparatus of claim 1 wherein the pressure vessel comprises an autoclave.

3. (Cancelled)

4. (Previously amended) The chemical processing apparatus of claim 1 wherein the heat conductive medium comprises SiC.

5-10. (Cancelled)

11. (Previously amended) The chemical processing apparatus of claim 4 wherein the SiC comprises SiC in particulate form.

12. (Previously amended) The chemical processing apparatus of claim 11 wherein the SiC in particulate form has a particle size of between about 5.0 microns to about 1000.0 microns.

13. (Previously amended) The chemical processing apparatus of claim 12 wherein the SiC in particulate form has a particle size of between about 100.0 microns and 500.0 microns.

14. (Previously amended) The chemical processing apparatus of claim 1 wherein the microreactor is supported within the inner volume of the pressure vessel by the heat conductive medium.

15. (Previously amended) The chemical processing apparatus of claim 14 wherein the microreactor is supported within the inner volume of the pressure vessel by the heat conductive medium such that temperature control for the microreactor can be achieved by controlling the temperature of the pressure vessel rather than by directly controlling the temperature of the microreactor itself.

16. (Previously presented) The chemical processing apparatus of claim 1 wherein said inlet line is positioned and arranged so as to be capable of introducing into the volume surrounding the microreactor within the pressure vessel, one or more of the one or more fluids to be processed.

17. (Previously presented) The chemical processing apparatus of claim 1 wherein said outlet line is positioned and arranged so as to be capable of withdrawing from the volume surrounding the microreactor within the pressure vessel, one or more of the one or more processed fluids.